UNUSUAL EPILEPTIC PHENOMENA.

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AN epileptic aura is not, I am convinced, as frequent an accompaniment of the paroxysm in its various degrees as text books, (especially English authorities) would lead us to expect. The number of cases in which it is absent has been a matter of surprise to me, while its complex nature in certain rare cases is equally surprising. Having observed with much interest some unusual, and even unique pre-convulsive phenomena and also some unusual cases of the disease, an account of some of these may be interesting to the profession.

In my service at this institution there are 57 epileptic patients, and, with the view of determining the relative frequency of the aura in these cases, I carefully examined 33 of them, whose mental condition admitted of reliable results. Of these, 20 were male, and the remainder female patients. In 16 of these cases (or 48.5 per cent.) there was no distinct aura of any kind, while in 17, various sensations were described. In 5 of the latter cases, the aura was gastric in origin, and went rapidly to the head. The sensation was variously described as a painful (in one case), burning, or distressed feeling. In three of the 17 cases, it was characterized as a general bodily sensation, or universal aura, in one being a "coldness all over," and, in the remaining two, a sensation of numbness, combined, in one, with dancing colored lights before the eyes. In three cases, the aura was confined to the head, and consisted of a sharp pain (in one case), vertigo in the second, and a loud noise in the left ear in the third patient. In two cases, the warning note of the paroxysm consisted of a "distress," and a sense of constriction respectively, beginning within the thorax, and

going to the head before they became unconscious. In only one case did the aura start in an extremity. In this case the paroxysm began with numbness and tingling in both feet usually, (sometimes one), and this gradually goes up the legs to the knees, increasing in intensity. When the aura reaches the knees, the patient becomes unconscious, and states that it never extends beyond that point. The remaining three of these 17 patients exhibited more complex sensations before their convulsions. The first of these before each of his seizures, which usually occur once a month, has visions of various animals float before his eyes. The most constant he describes as "large, heavy birds," although horses, cows, dogs, and other animals enter at times into them. On two occasions it has seemed to me that his ordinary convulsive attack has been substituted by an excessive amount of these visions. On these two occasions he described the visions with unusual distinctness. They were greatly prolonged, and were followed by no convulsive seizure. Usually, however, an hallucination of sight is the immediate precursor of his epileptic attacks. The second patient presents a more complex aura. It consists of sensory and special sense parts, the latter being, as in the first case, a hallucination of sight. His paroxysm is ushered in by a sudden numbness and tingling in the hands and feet, with a sensation of vertigo in the head. Succeeding this, a momentary blackness comes over the sight, followed by a play of colors, which quickly arrange themselves into a picture, which the patient describes minutely. This consists of a central figure of an old man, clad in flowing garments, with long white waving hair, walking along the sea shore, and behind him is a boat with men in it. The shore is of bright scarlet, while the sea, boat and figures are of natural colors. This vision is a constant one, and occurs before each convulsion. In some of his attacks, the boat with its occupants are absent from the picture, but the central figure of the old man, and the other surroundings, as described, are always present. The third patient has still more complex warnings before her paroxysms, in which ordinary sensation and two special senses, (sight and

hearing) are involved. Immediately preceding a convulsion she has a vision of angels, surrounded by a dazzling light, and hears voices singing. Preceding this, there is a buzzing in the ears, and a pain flashes through the head. During the time she sees the vision she automatically repeats a certain sacred verse, (always the same one), and then unconsciousness and the convulsive phenomena follow regularly. I have frequently seen this patient start up from her bed in the evening and commence repeating this verse, but, when half through with it, it would be cut short by a loud scream and the ordinary sequelæ in such patients. Afterwards she has repeatedly told me of this same vision, and it appears to be a constant accompaniment of her paroxysms.

Since writing the above, I have found in another patient curious prodromata. The patient is a male aged 20, and has had epilepsy since his childhood. Almost constantly before an attack he fancies himself in some familiar place, other than where he really is. Sometimes it is at the home of his boyhood, while, at other times, it merely refers to an adjoining apartment, in which he has previously been seated Before other attacks, he has a brilliant play of colors before his eyes, which commence as broad bands of bright colors, running in various directions, and then begin to whirl about until unconsciousness ensues. In numerous attacks these prodrones are entirely substituted by a perversion of sight, which takes the form of a mouse running over the floor towards him. When the animal reaches him, he loses consciousness. He has had a few convulsions without an aura of any kind preceding. It is interesting here to note that this patient has always had a horror of a mouse.

The epileptic convulsion itself is subject to so many modifications in different cases, that rarely do we meet with cases that can be designated as very unusual. I think, however, that the following cases deserve attention, as being very unusual cases of the disease. These have been under observation for a number of years, and their previous histories are obtained from the records of this house.

CASE I.—Mrs. A. W., age 27, no history of any hereditary taint. At the age of five she began have to epileptic convulsions of the ordinary type. Her disease progressed very rapidly, so that, when 9 years old, she was sent to an institution for treatment, her convulsions being so frequent that it was impossible to properly care for her at home. She remained under treatment for two years, during the first of which it is stated that frequently she would have as many as thirty-six convulsions a week. At the end of two years however, she was discharged, greatly improved. During the two years following her discharge she had no seizures, and the child improved mentally and physically to a marked degree. Then her epileptic seizures again, though slowly, recurred, but it was now noted that their character was different from her previous attacks. This difference consisted in a tendency to certain violent acts, preceding the attacks. These acts varied with the surroundings, and generally consisted in her flinging in any direction any article which happened to be in her hands, or in overturning movable furniture. Succeeding these acts she would have an ordinary convulsion, in which she fell to the floor, and had tonic and clonic general spasms. Later on, a further alteration occurred, and she began to run a variable distance before her paroxysms. At first she would run only a short distance, and gradually this was prolonged, until she would frequently run to a neighbors house and have a convulsion, afterwards remembering nothing of such an act, and wondering how she came to be there. This feature again made it necessary to remove her from home, and she was first admitted to this institution December 3d, 1879.

On admission, the patient was in good physical condition. She could read and write well, and her mental condition, as evidenced by her conversation showed great improvement since her discharge from the institution to which she was first sent. Her two years of immunity from the disease had allowed her faculties to develop, and no one would have classified her as "weak minded." She could give no account of her attacks, and only knew of their occurrence when informed afterwards that she had

had them. Under treatment she improved again; her seizures grew less frequent, while their character remained the same. She was discharged greatly improved, July 31st, 1882. She remained at home, having very infrequent and mild convulsions until February 19th, 1884, when she was readmitted on account of an exacerbation of her disease. During the time she remained at home she married (upon the advice of her mother, who hoped that the marriage state would be beneficial to her), and had one child, after the birth of which her attacks increased in frequency. During 1885–1887 she continued to have her paroxysms at intervals of from ten days to several weeks, with the exception of several longer intermissions, one of which began October, 1886, and lasted a few months. During the last two years a further evolution has taken place in the manifestations of her disease. This consists in the addition of pure running attacks of the duration of the convulsion and frequently substituting one. Gradually her convulsions became less frequent, and these running attacks more frequent, until the latter outnumbered the former, and have at present become by far the most frequent expression of her epilepsy. Her ordinary attack may now be described as follows: Suddenly starting from any employment at which she may be engaged, the patient utters a piercing scream, and begins to run wildly up and down the room she may be in, with wide open, staring eyes and dilated pupils. Any obstruction is overcome, and, while in this state, the woman is a marvel of strength; almost incredible stories being related by her attendants of her prowess. On one occasion she utterly demolished a partition of strong boards, and, on another, she wrenched away a settee on which a number of persons were sitting, and then dashed it down in a wreck and continued her flight. During this time she emits a low moaning noise. She then, after a variable period of from a few seconds to several minutes, ceases running and becomes quiet. She then instantly begins to arrange in order all that she has disordered during the spell. As this occurs most frequently in her own room, this feature is best appreciated there. She here gradually restores to order an

apartment that has literally been torn to pieces, almost every article being upset, including the bed, with the clothes. During this time her manner is abstracted and the pupils dilated. She answers questions slowly and correctly, but never essays to speak, unless questioned. The face is usually pale. It is not until everything has been returned to its place, even to minute toilet articles, that consciousness returns, and she then remembers nothing of the attack, and indeed would not know of its occurrence unless informed. At rare intervals she has a mixed attack, in which she runs, falls, and is convulsed, and then immediately gets up and rearranges her room as in a pure running attack. The remarkable feature of this case is that if the patient is held at the beginning of the attack, it instantly assumes the nature of an ordinary epileptic seizure. Between the convulsions, the patient is a good looking female, of exceptionally fine physique, and shows, as yet, little mental deterioration, notwithstanding the long duration of the disease.

CASE II.—The second case resembles the first, and is as follows: Mary G., age twenty-five, single; family history shows predisposition to nervous disease. There is no history of syphilis or tuberculosis. She had scarlet fever at the age of two and recovered, "without good sense." At six, she began to have fits, and a few months later a tape worm was expelled. Unfortunately (as in a few cases already reported), her convulsions did not then cease, but continued at irregular intervals, gradually growing more frequent, until, when fourteen years of age, her mental condition began to deteriorate, and she became passionate and destructive. She was admitted here first on September 24th, 1880. Under a course of bromides she improved considerably, and was discharged from the institution, July 31st, 1881. She remained at home, having occasional convulsions, until July 15th, 1886, when she was readmitted here on account of a change for the worse in her mental condition, maniacal attacks being added to her previous symptoms. Her physical health was even improved at this

time. Since her last admission this patient has had running attacks develop gradually, as in the first case. They are of the same character, more frequent, and they nearly wholly substitute her ordinary epileptiform convulsions. It would seem in this case also, as in the first, that the type of her seizure has undergone a gradual evolution. The last seizure in which she became convulsed occurred about three months ago, while, since then, she has had almost daily running seizures. Her mental condition is now advancing rapidly to complete dementia. The patient remembers nothing that occurs during her attacks, but they are not followed by epileptic automatism as in Case I. The third case, in which consciousness is not lost in all the attacks, is as follows:

CASE III.—Maggie S., age twenty-four, single; no history of any nervous disease, syphilis, or tuberculosis in her family. Her physician gave her history as follows: At the age of two she began to have chorea. This began gradually, and increased to a violent form of the disease, continuing until her seventh year, when it ceased. During the following year, she began to have epileptic convulsions at long intervals, and continued to have them until March, 1887, when they ceased. Shortly after her last convulsion she began to have attacks of maniacal excitement, and was admitted here, March 28th, 1888. She had had no convulsions since March, 1887, but had had, at intervals corresponding to her convulsive attacks, periods of acute mania. From the history obtained from her physician, it would appear that all her former attacks resembled ordinary epilepsy, but since her admission here, peculiar seizures have been noted in addition by several of the resident medical staff, and I have been fortunate enough to have witnessed several of them. Generally she has some warning of their approach by sharp pains in the lower extremities, with a sense of dizziness in the head, and, at times, gastric distress. She then finds a seat, usually placing her hands upon her knees. By this time a fine twitching occurs in the muscles of expression; the eyes look straight for-

ward; the pupils are equally dilated; but the woman is conscious, answering questions correctly and expresses her sensations. This is succeeded by quick tonic and clonic spasms of the spinal muscles, especially in the cervical and dorsal regions, so that with each one the head is slightly thrown back, and the hands involuntarily lifted from the knees. At times the spasms involve the extensor muscles of the arms and legs, so that the legs are straightened, and the arms are drawn at right angles to the body. The contractions occur several times in quick succession, and then an interval of a few seconds occurs, to be succeeded by another series of contractions. During this time the woman answers questions, and, during the spasms, utters various exclamations, such as a person might do when receiving sharp shocks from an electric machine. The pulse during the attack is small and frequent, and the seizure itself frequently lasts as long as fifteen minutes. In some of these attacks the patient momentarily loses consciousness. About once every three months this patient has an ordinary attack of grand mal, typical in all respects. Treatment in this case has not seemed to influence the disease; while the patient enjoys good physical health and has had no return of maniacal symptoms during the past year. In this case the existence of chorea prior to the commencement of epilepsy is worthy of note.

The last anomalous case among these 57 patients is one who has both hysterical and epileptic convulsions, and they frequently substitute each other. Her attacks are typical of either hysteria or epilepsy, and never assume the hystero-epileptiform type. Her history is briefly as follows:

Mrs. T., age 36; has been subject to epilepsy from the age of five years. On admission, one year ago, she was having, on an average, four convulsions a week. She was naturally of a nervous disposition, but her family history could not be further obtained. Since admission she has improved, and her attacks of epilepsy are now comparatively infrequent. I have known her to go for two months without any epileptic seizure, but, during that time, she would have several characteristic hysterical convulsions.

During these, opisthotomos frequently developed and the convulsions were unusually severe and characteristic. One that occurred on May 26th, 1889, was as follows: While in conversation, she complained of feeling "very nervous," and said that she was "going to have a spell." In a few moments, with an exclamation, she fell off her chair on the floor, being careful not to hurt herself, globus hystericus occurred, and for some minutes she lay there quietly. Then rigidity developed, commencing first in the arms, and extending over the whole body. A series of postures were now assumed with lightning rapidity by the patient, and she then became quiet. Examination showed universal cutaneous anasthesia extending over the conjunctivæ. After this interval, rigidity recurred and was succeeded by quick successive attacks of opisthotomos, the patient assuming first that position, then another, then reassuming the first with extreme rapidity. At this time the arms were rytmihcally waved, and, at the close of the attack, were extended at right angles to the body, and the face took on an ecstatic expression not common to the disease in this country. After two hours, the patient recovered, and had another similar attack the same evening. Her epileptic seizures are wholly without warning of their approach, and are typical of the disease in all respects. The patient herself readily differentiates between the two kinds of paroxysms.

The change of nature which the epileptic attack has undergone in the first three cases is certainly remarkable. In the first two cases the paroxysms have been nearly similiarly modified—in both the running attacks have gradually developed and substituted the ordinary convulsions, until the former have become the rule and the latter the rare exception.

In this first case, the manner in which the seizure is recovered from, consciousness being absent, while the woman automatically answers questions sharply put, and re-arranges her room perfectly, seems to me to present a very unusual and complex case of this curious mental condition. While in this state of epileptic mental automatism the pa-

tient resembles a somnambulist. At times she regains consciousness more rapidly than at others, the change from one state to the other being almost immediate and complete, careful examination failing to elicit any consciousness on the part of the patient of her re-arranging her room during the preceding half hour. Another interesting feature of this condition of automatic consciousness is the ability of the patient to perform certain suggested acts, and afterwards have no remembrance of doing them. On two occasions I have thus made the patient assume various postures, and return to bed, arranging the clothing as directed, while on the following morning she had no recollection of my visit to her room. Cases of epileptic automatism have been reported by many writers, including Bucknill and Tuke (4th edition, page 337 of "Psychological Medicine"), H. C. Wood ("Nervous Diseases"), Hammond ("Treatise on Insanity"), Legrand du Saulle ("Etude Medico-legale sur les epileptiques," Paris, 1877), and many others; but I have not seen the report of any case that combines, as this patient does, pure running attacks with such well marked and persistent epileptic mental automatism. Automatic procedures after ordinary epileptic convulsion are not uncommon, and several of my patients exhibit various degrees of it. One always undresses immediately after an attack, and this is said by Gowers to be a frequent performance in such cases. The great similarity between this mental state and double consciousness is referred to by H. C. Wood ("Nervous Diseases," page 460). He also details a case (page 106), in which (as in Case III.) consciousness was retained during the attack, which commenced always with an aura in the hand, extending to the neck and ended with convulsive movements of the muscles below the point to which the aura attained. The third of the preceding cases seems to me to present a rare form of epileptic seizure, inasmuch as in some of the attacks, as already described, consciousness is not lost. This was determined both by inspection of the patient during the paroxysm, and also by careful questioning. The patient, who is an intelligent lady, after such attacks can

accurately give all the events that occurred in natural order, including conversation that was carried on during the attack; so that it may safely be concluded that at no time in such of her attacks was consciousness impaired or lost. The occurrence of sharp pains in the lower extremities, associated with gastric uneasiness and vertigo preceding the attack, together with the convulsive twitching of the facial muscles, and the intermittent tonic and clonic contractions of the other muscles as already referred to, give additional interest to this form of epileptic seizure. Its long duration and the comparatively slight after-effects (headache and malaise) are also worthy of note. When loss of consciousness does occur in these attacks it is momentary, but it may occur several times during one attack. The patient never falls except in her ordinary epilepsy, which occurs, as already stated, about once every three months. These symptoms would point to the existence of some local organic lesion, while the history of the case, with the absence of other signs, indicates that it is more probably one of the idiopathic forms following chorea. The connection in this case between chorea and epilepsy seems close, while the duration of the chorea, its rather abrupt termination, with the almost immediate development of epilepsy, together with the absence of any constitutional vice, makes the connection more probable.

In conclusion, my thanks are due to Dr. H. C. Harris for the privilege of reporting these cases, and also to Dr. Eliot Gorton and Dr. L. L. Mial for reference to cases in their wards.